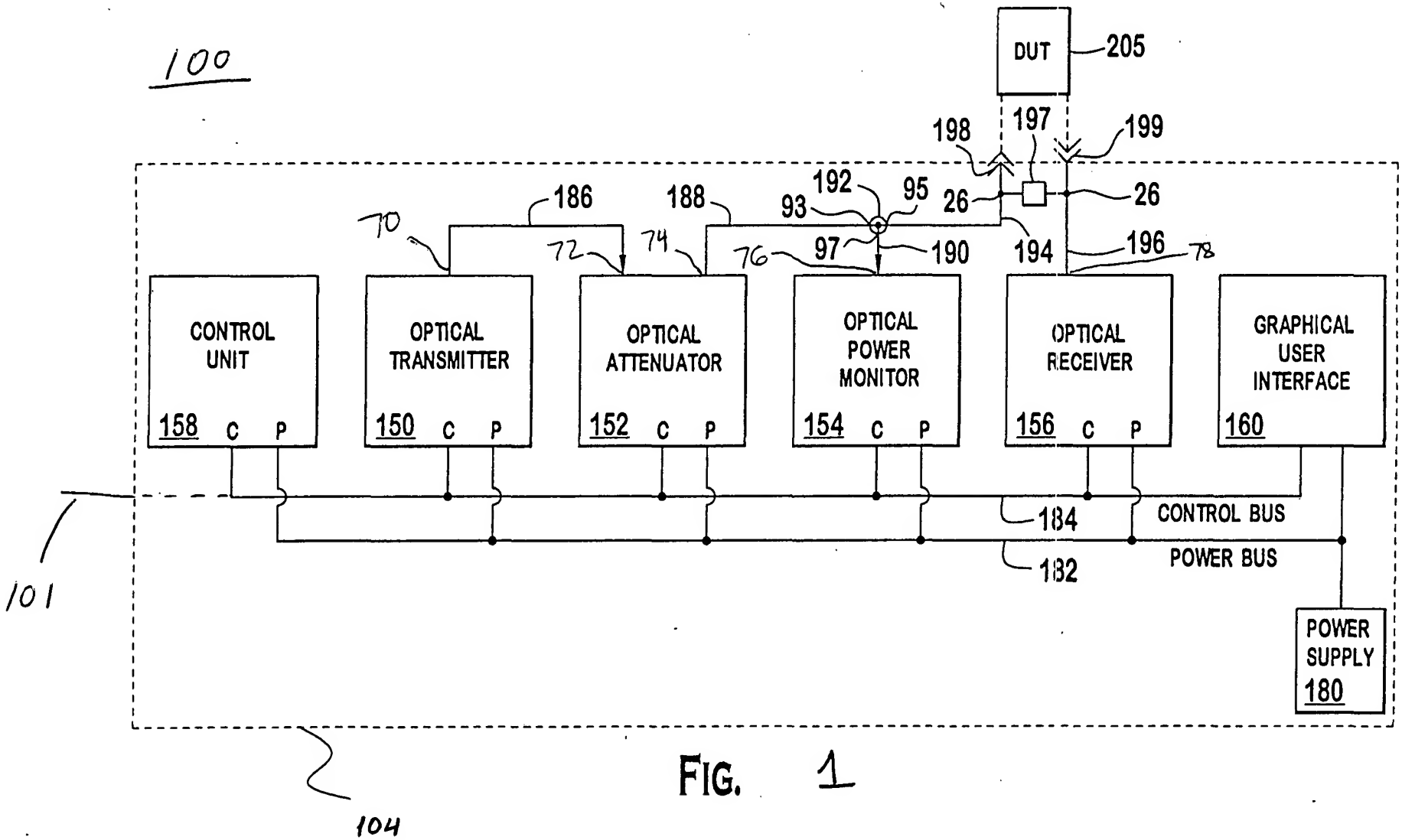

100
DUT
205
198
197
199
186
188
192
95
93
26
26
70
72
74
76
97
190
194
196
78
CONTROL UNIT
158 C P
OPTICAL TRANSMITTER
150 C P
OPTICAL ATTENUATOR
152 C P
OPTICAL POWER MONITOR
154 C P
OPTICAL RECEIVER
156 C P
GRAPHICAL USER INTERFACE
160
184
CONTROL BUS
182
POWER BUS
POWER SUPPLY
180
101
104

FIG. 1

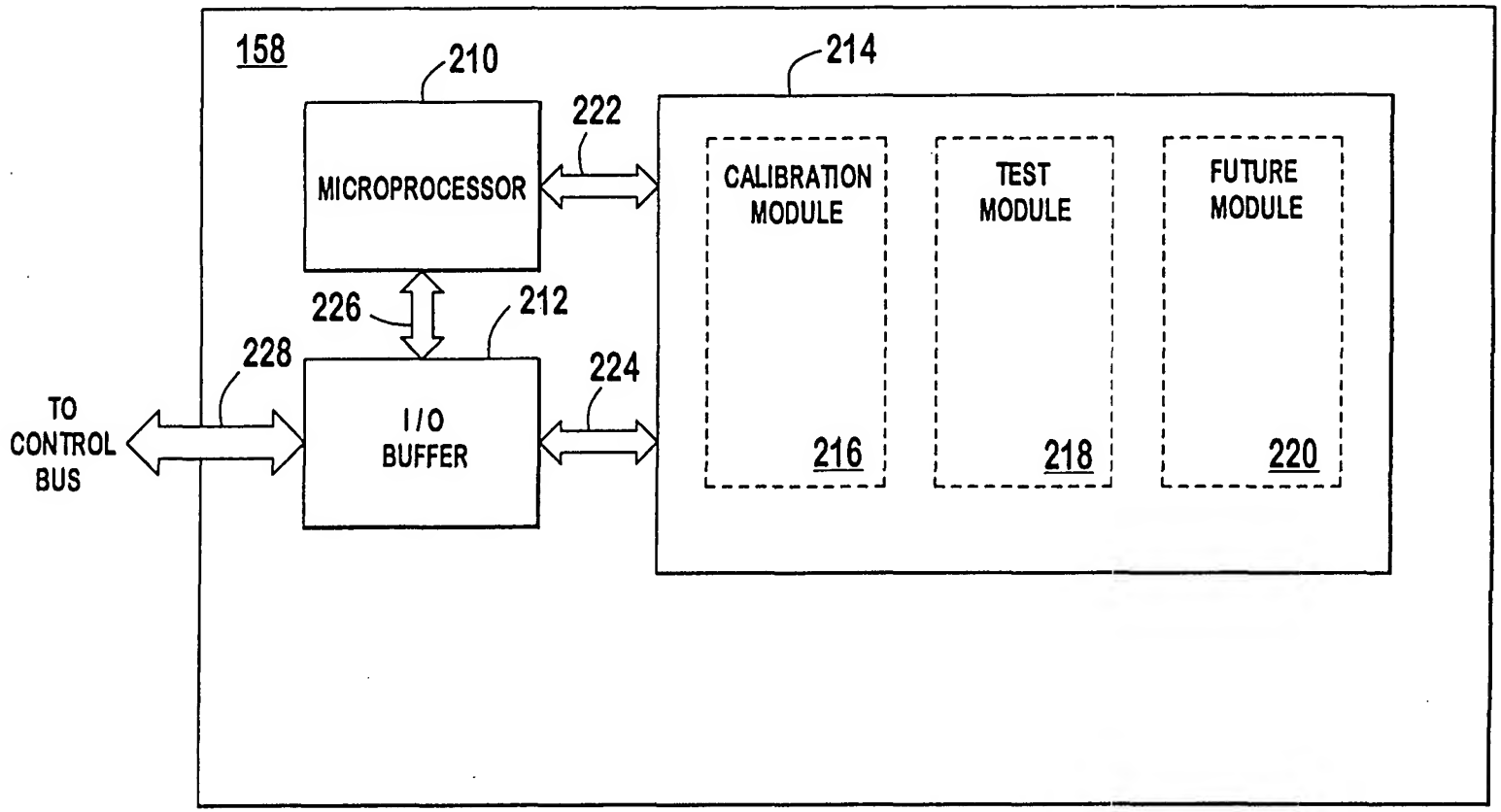

158
210
214
222
MICROPROCESSOR
CALIBRATION MODULE
TEST MODULE
FUTURE MODULE
226
212
228
224
TO CONTROL BUS
I/O BUFFER
216
218
220

FIG. 2

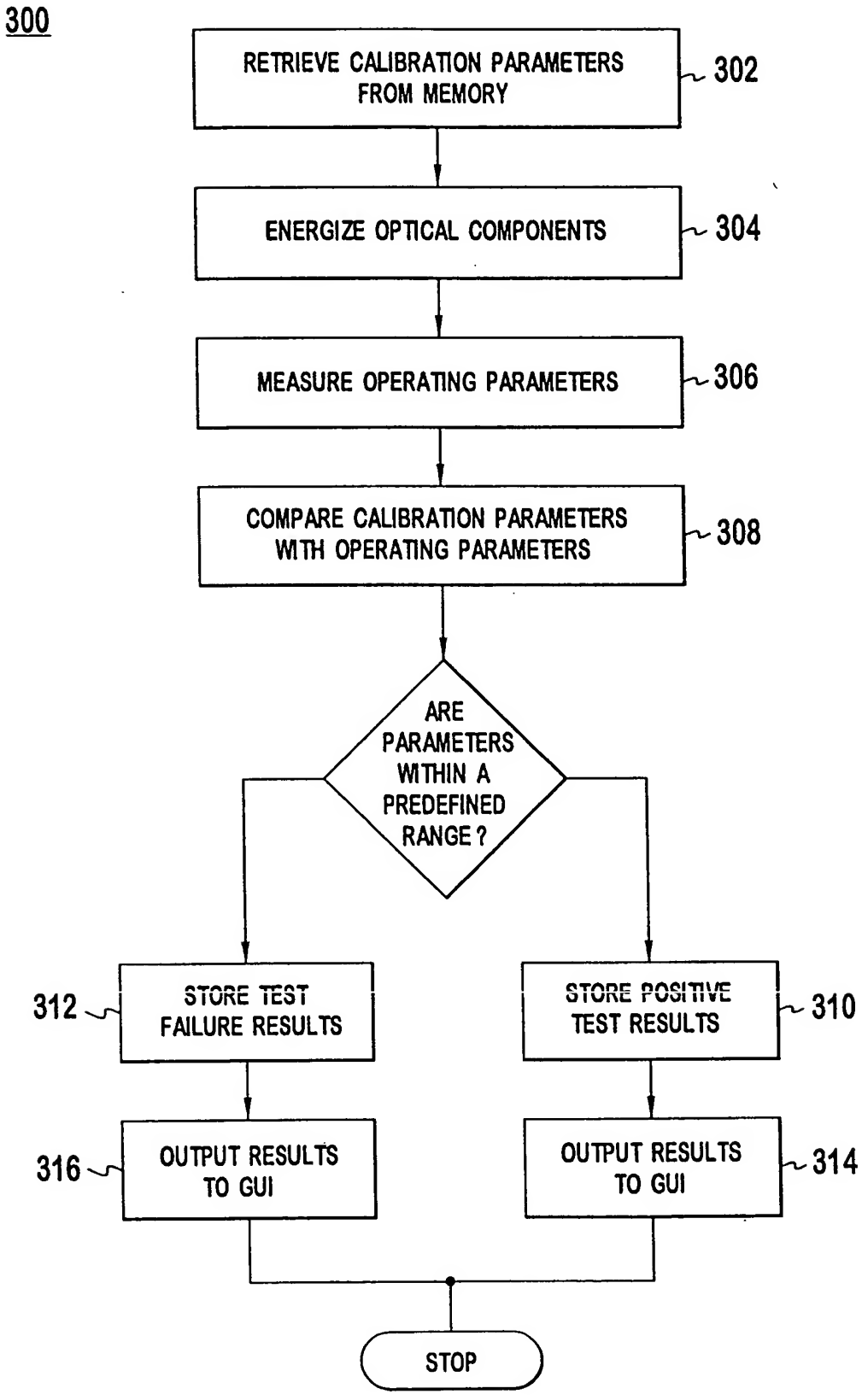

300
RETRIEVE CALIBRATION PARAMETERS FROM MEMORY
302
ENERGIZE OPTICAL COMPONENTS
304
MEASURE OPERATING PARAMETERS
306
COMPARE CALIBRATION PARAMETERS WITH OPERATING PARAMETERS
308
ARE PARAMETERS WITHIN A PREDEFINED RANGE?
312
STORE TEST FAILURE RESULTS
STORE POSITIVE TEST RESULTS
310
316
OUTPUT RESULTS TO GUI
OUTPUT RESULTS TO GUI
314
STOP

FIG. 3

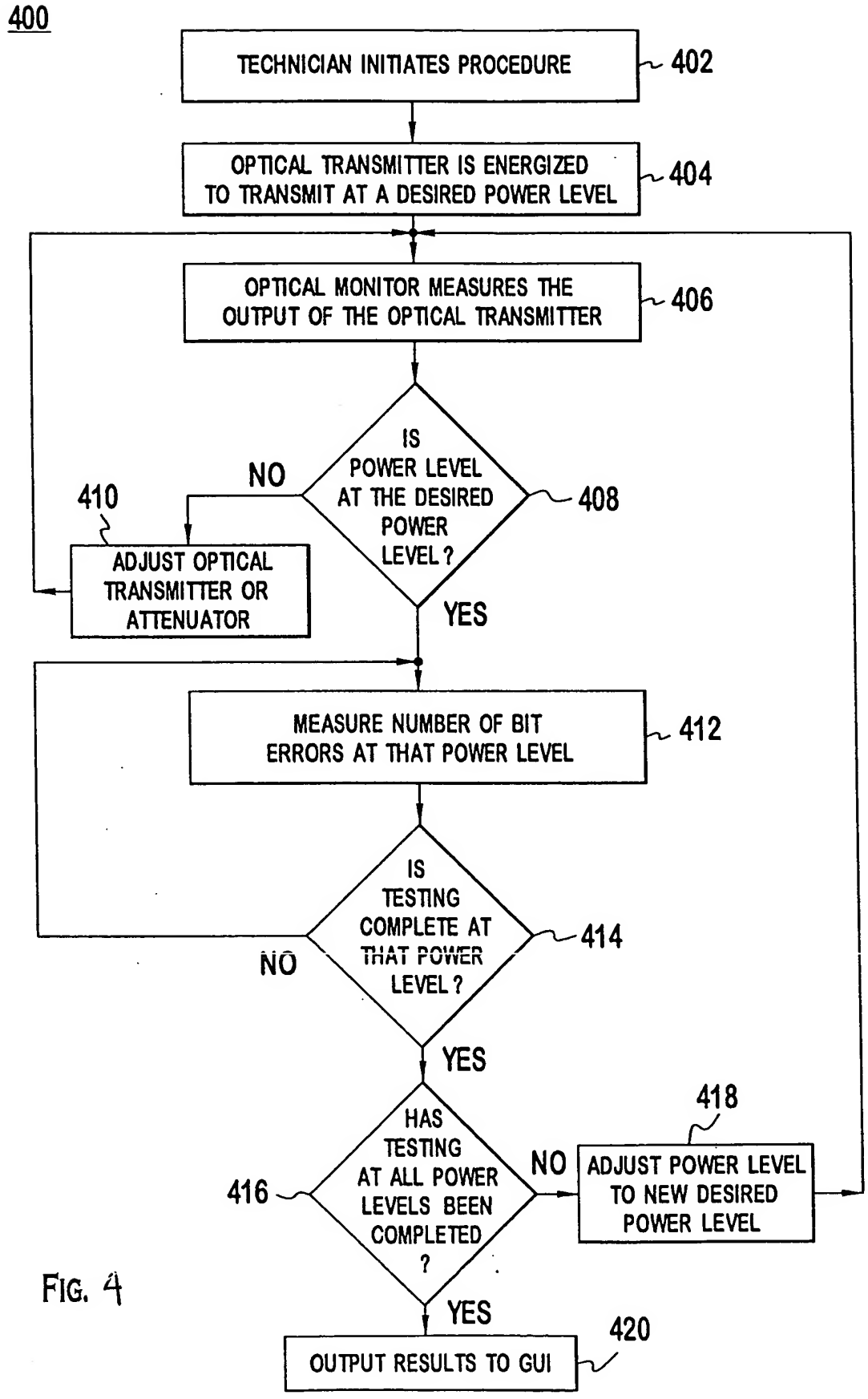

400
TECHNICIAN INITIATES PROCEDURE
402
OPTICAL TRANSMITTER IS ENERGIZED TO TRANSMIT AT A DESIRED POWER LEVEL
404
OPTICAL MONITOR MEASURES THE OUTPUT OF THE OPTICAL TRANSMITTER
406
IS POWER LEVEL AT THE DESIRED POWER LEVEL?
408
NO
410
ADJUST OPTICAL TRANSMITTER OR ATTENUATOR
YES
MEASURE NUMBER OF BIT ERRORS AT THAT POWER LEVEL
412
IS TESTING COMPLETE AT THAT POWER LEVEL?
414
NO
YES
HAS TESTING AT ALL POWER LEVELS BEEN COMPLETED?
416
NO
418
ADJUST POWER LEVEL TO NEW DESIRED POWER LEVEL
YES
OUTPUT RESULTS TO GUI
420

FIG. 4

FIG. 5

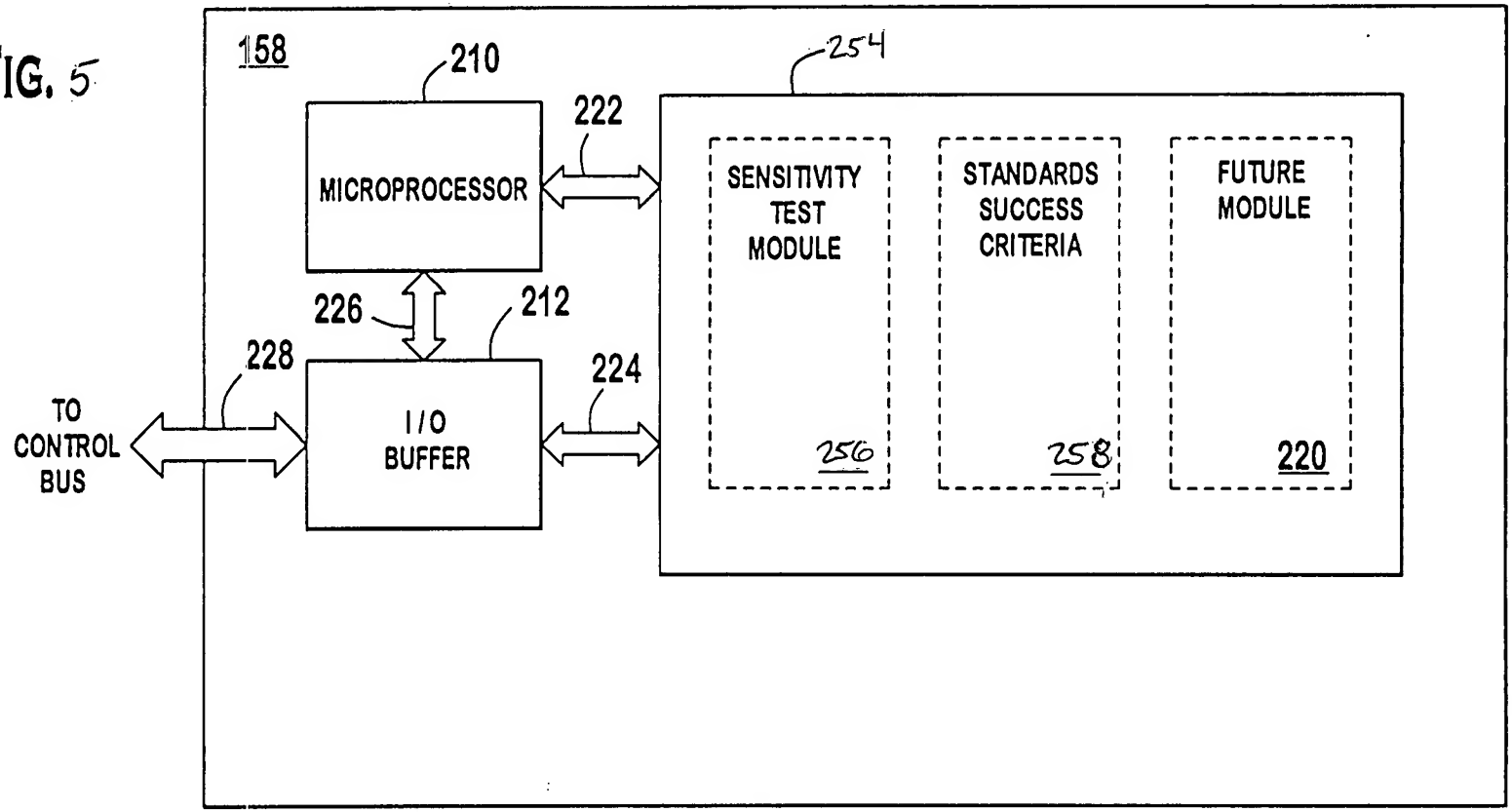

158
210
254
222
MICROPROCESSOR
SENSITIVITY TEST MODULE
256
STANDARDS SUCCESS CRITERIA
258
FUTURE MODULE
220
226
212
228
224
I/O BUFFER
TO CONTROL BUS

FIG. 6

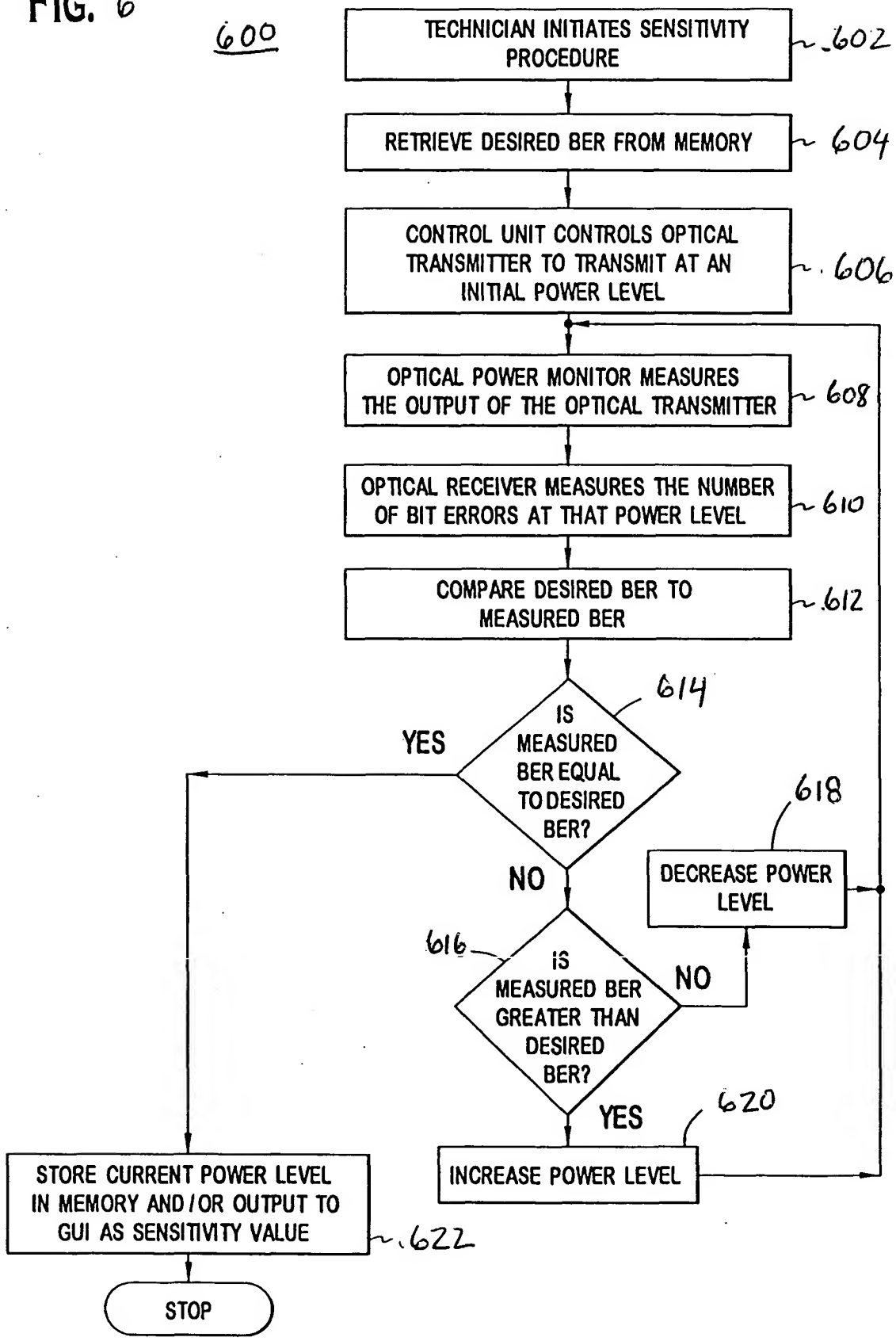
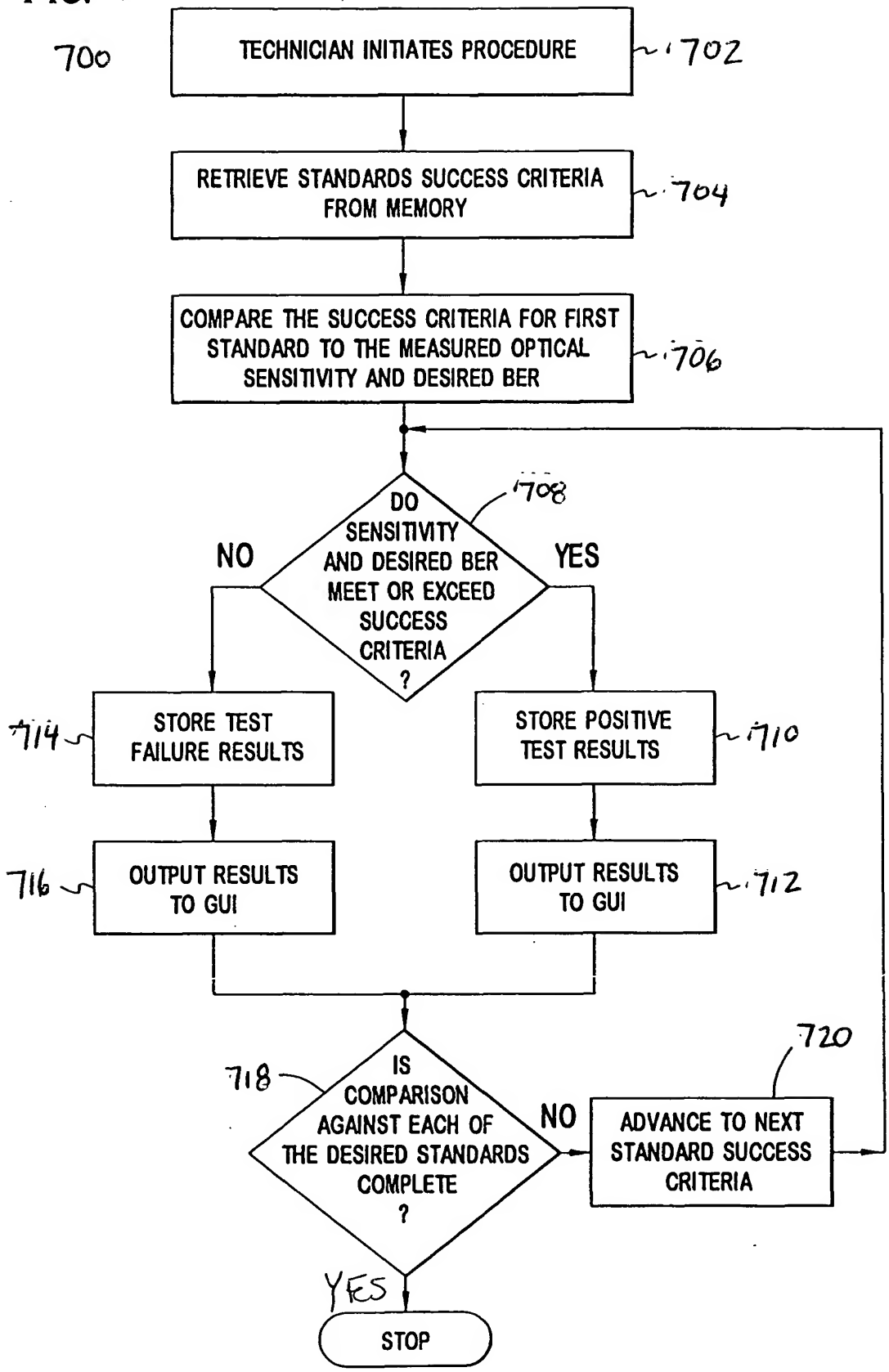

600
TECHNICIAN INITIATES SENSITIVITY PROCEDURE
602
RETRIEVE DESIRED BER FROM MEMORY
604
CONTROL UNIT CONTROLS OPTICAL TRANSMITTER TO TRANSMIT AT AN INITIAL POWER LEVEL
606
OPTICAL POWER MONITOR MEASURES THE OUTPUT OF THE OPTICAL TRANSMITTER
608
OPTICAL RECEIVER MEASURES THE NUMBER OF BIT ERRORS AT THAT POWER LEVEL
610
COMPARE DESIRED BER TO MEASURED BER
612
IS MEASURED BER EQUAL TO DESIRED BER?
614
YES
NO
DECREASE POWER LEVEL
618
IS MEASURED BER GREATER THAN DESIRED BER?
616
NO
YES
INCREASE POWER LEVEL
620
STORE CURRENT POWER LEVEL IN MEMORY AND/OR OUTPUT TO GUI AS SENSITIVITY VALUE
622
STOP

FIG. 7


700
TECHNICIAN INITIATES PROCEDURE
702
RETRIEVE STANDARDS SUCCESS CRITERIA FROM MEMORY
704
COMPARE THE SUCCESS CRITERIA FOR FIRST STANDARD TO THE MEASURED OPTICAL SENSITIVITY AND DESIRED BER
706
DO SENSITIVITY AND DESIRED BER MEET OR EXCEED SUCCESS CRITERIA ?
708
NO
YES
STORE TEST FAILURE RESULTS
714
STORE POSITIVE TEST RESULTS
710
OUTPUT RESULTS TO GUI
716
OUTPUT RESULTS TO GUI
712
IS COMPARISON AGAINST EACH OF THE DESIRED STANDARDS COMPLETE ?
718
NO
ADVANCE TO NEXT STANDARD SUCCESS CRITERIA
720
YES
STOP

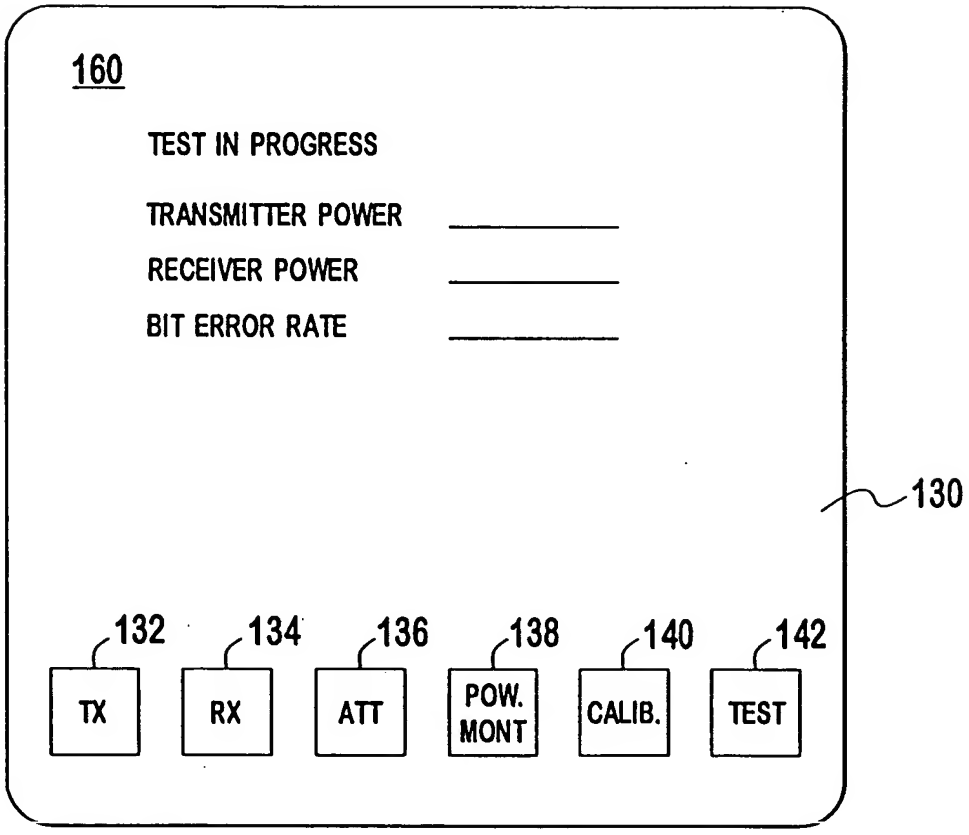

160
TEST IN PROGRESS
TRANSMITTER POWER
RECEIVER POWER
BIT ERROR RATE
130
132
134
136
138
140
142
TX
RX
ATT
POW. MONT
CALIB.
TEST

FIG. 8